More Information

This is the first in a series of factsheets on hoof care for the Newfoundland Pony. Further information can be found in the other Pamphlets, through the many magazines and books available on horses, and through your Regional Veterinarian.

Links

Newfoundland Pony Society:

www.newfoundlandpony.com

For more information, please contact your Regional Veterinarian, The Newfoundland Pony Society or the Animal Health Division.

Other information pamphlets are available online from the Department of Natural Resources at:

www.nr.gov.nl.ca/agric/

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Newfoundland Labrador

Hoof Care of the Newfoundland Pony: Structure of the Hoof

Introduction

The Newfoundland Pony is known for its general hardiness and flint-hard hooves. While these traits are desirable, they do not suggest that the health needs of this animal are any less than those of other horses and ponies. It is for this reason that a series of pamphlets have been written on care of the Newfoundland Pony's hooves. This is the first in that series.

Structure of the Hoof

The major parts of a pony's foot are the hoof wall, coronet, sole, frog and the internal structures such as the bones, cartilages, tendons and connective tissue. Internal structures will only be discussed briefly.

Hoof Wall

The hoof wall is a horny substance made up of parallel fibres. It should be dense, straight and free from rings (ridges) and cracks. Viewed from the side (figure 2), the wall at the toe should be a continuation of the slope of the pastern.

The main functions of the wall are to:

1. provide a weight-bearing surface not easily worn away;
2. protect the internal structure of the foot; and
3. maintain moisture in the foot.

Usually, the hoof wall is thicker at the toe than at the quarter and heel. The hoof wall is protected by the periople, a varnish-like coating that holds moisture in the hoof.

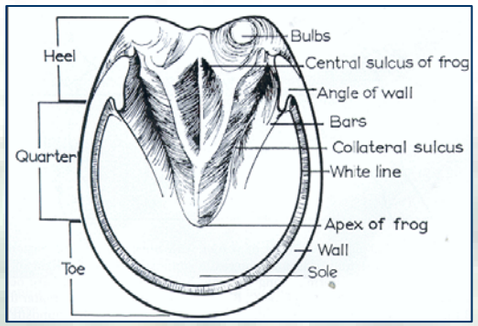

Figure 1: *Normal forefoot.*

Coronet

The coronet, or coronary band, is the source of growth for the hoof wall. It is directly above the hoof wall and is protected by a thick layer of skin and dense hair. A healthy foot will grow about 3/8 inch per month. A change in the rate of growth of the hoof can be caused by a change in the amount of exercise, the ration, the onslaught of illness, and the general state of health and condition of the animal. Injury to the coronary band can result in irregular growth of the hoof wall, which may lead to a permanently unsound hoof wall.

The hind feet grow faster than the forefeet, and unshod feet grow faster than shod feet. The feet of mares and geldings grow faster than those of stallions.

Sole

The sole of the foot is a horny substance that protects the sensitive inner portions of the foot. It should be firm, slightly concave and of uniform texture. The pony has no feeling at the exterior sole surface.

A flat-footed pony tends to receive more bruises and injuries to the sole. Also, ponies that have experienced founder and have developed a dropped sole are more easily bruised at the sole.

Frog

The frog, located at the heel of the foot, forms a "V" into the center of the sole. The frog is a spongy, flexible pad, and is also a weight-bearing surface. It is the intermediate organ between the plantar cushion and the source of pressure from the pony's weight. The frog is differentiated from the sole of the foot by two lines called commissures.

The condition of the frog is generally a good indication of the health of the foot. Without proper flexibility, expansion and ground contact, the frog cannot perform its function in complementing the circulation of blood and the absorption of shock throughout the foot.

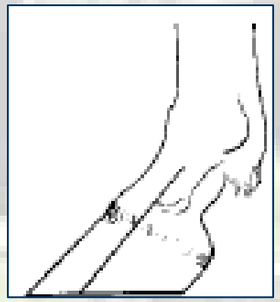

Figure 2: View of angle of wall and slope of pastern.

Internal Foot Structure

To be able to provide proper foot care, first gain an understanding of some of the important internal parts of the foot and their functions (figure 3).

Coffin Bone (D) - provides the shape of the foot and the rigidity needed to bear weight.

Plantar (Digital) Cushion (F) - expands and contracts to absorb shock and pumps blood from the foot back towards the heart.

Navicular Bone (E) - serves as a fulcrum and bearing surface for the deep flexor tendon which is responsible for extension of the foot as it progresses through a stride.

Sensitive Laminae (G) - serves as an attachment between the hoof wall and the coffin bone, and also as the main area of blood circulation within the foot.

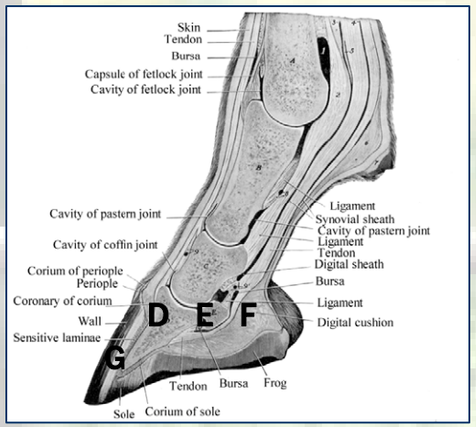

Figure 3: Internal structures of the foot.